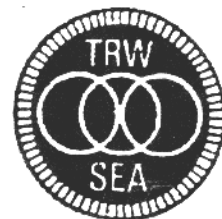




CROSSTALK

A Publication of the TRW Amateur Radio Club



JUNE 1993

CALENDAR :

Every Monday: DCS Net on 145.32 Repeater @ 7:30 PM

Every Wednesday: Emergency Communications Team Net on 145.32
Repeater at Noon

Every Friday: Club Breakfast in Bldg S Cafeteria, 7 to 8 AM

June 1: Eyeball QSO meeting, 5:30 PM, Upper Crust Pizza, Corner
Manhattan Beach Blvd and Inglewood Ave

June 8: Emergency Communications Team meeting, R3/1413, Noon

June 8: Executive Board Meeting, E2/1200, 5:30 PM

June 12-14: ARRL June VHF QSO Party

June 18: Technical Chairman's Meeting, Bldg 65 Shack, Noon

June 26-27: **FIELD DAY**, see article in this issue

June 26: Swap Meet, parking lot on NW corner of Aviation and
Marine, 7 to 11 AM

June 29: Club meeting, E2/1200, Noon

EDITORS NOTES : The deadline for Crosstalk submissions is the eyeball QSO meeting the month before publication. Please plan ahead if you want your contest team attempt or activity publicized in our club newsletter.

The W6TRW Field Day team needs your help. Last year we won the class 7A competition and just missed making the overall top 10 for all categories. Please volunteer and help our Field Day team make the top 10 this year. It doesn't matter what your license class or experience level is, you can participate in this fun event.

73 de KJ6GR

TRWARC FIELD DAY 1993

Would you like to participate in a reenactment of the landings at Normandy (WITH THE ORIGINAL CAST)? Would you like to see what it was like on the front line of the charge of the light brigade? Ever wonder what the damage control officer on the S.S. Titanic felt like? Want to break out of the HUM-DRUM LIFE STYLE YOUR LEADING? Want to contact 200/500/1000 stations in a single day? Want to have a little fun with your friends and tune up your operating skills? Want a chance to check out your gear and make sure your ready for "THE BIG ONE."

IF ANY OF THESE THINGS INTEREST YOU THEN THE TRW ARC 1993 FIELD DAY IS FOR YOU!! Field Day will start with set-up Friday afternoon June 25, the operating period will start at exactly 11AM Saturday June 26 and end at 11 AM Sunday June 27. Our goal is: top 10 in '93!. We were number one in our class last year and 23 in the all over standings. We will be operating from Friendship Park in San Pedro with a great radio horizon, flush toilets, and a paved road all the way to the site. The food will be extraordinary. We will be operating class 7A with multiple transmitters from UHF to 80 meters and a novice station as an added bonus. Even if you've never been to a field day before there is a place for you - and it'll be a great way to learn the ropes (and turnbuckles too). CW, SSB, FM, PACKET, SATELLITE, STATIONS ALL NEED OPERATORS. If you can only help for a few hours - SOME THE MOST CRITICAL JOBS ONLY TAKE A FEW HOURS. Setting up and taking down can be more fun than operating (ever see 6 hams trying to erect a 40' flexible mast that will bend over double? Its worth the trip to field day just to watch). Whatever you like to do in ham radio we will have a spot for you this year. We're going to have several new stations and some new antennas. Our van will be there for a real demonstration of its capability. If there is anything you though you would like to do a field day- let me know.

IF YOU WOULD LIKE TO PARTICIPATE IN THE 1993 FIELD DAY PLEASE SEND ME A NOTE AT R2/1112 OR GIVE ME A CALL AT (310) 813-8386 or pick out a band you would like to operate and give the band captain a call.

73 JOHN SHEPHERD, WB6VYX
1993 TRWARC FIELD DAY CHAIR

LIST OF BAND CAPTAINS - TRW ARC 1993

BAND	CAPTAIN/CALL	WORK #(2)/LOCATION	HOME #
SPECIAL (1)	NINA WHIDDON KN6FL	39351 O1/2070	(310) 548-8179
VHF/UHF	RICH SAUER N6CIZ	35869 R9/2849	(310) 397-3038
12/17	FRANK CARTIER WA6RAY	22292 M2/1521	
NOVICE	BOB BURCHETT WB6SLC		(310) 534-4456
10 CW/SSB	combined w/ novice or vhf		
15 SSB	KEN EDWARDS KE6NA		(310) 325-2012
15 CW	STEVE KRESICH WU6C		(714) 525-1000
20 SSB	ANDRE BURGHARD KJ6PK	37945 M5/1262	(310) 834-7752
20 CW	GEORGE ELDRIDGE (3) N6RVC	(310) 333-9018	(310) 498-2872
40 SSB	DAVE QUALLS		(310) 429-9929
40 CW	BOB HUME KG6B	47557 R4/2128	
80 SSB	Need Help		
80 CW	Need Help		
POWER	WAYNE HOGENCAMP KI6GM		(310) 329-7457
FOOD	BETTY BURGHARD N6TRL		
SET UP	NEED HELP!		
TEAR DOWN	MIKE ZINGERY KB6TUS		(310) 830-3349
FRIDAY NITE	DIXSON ENRIQUEZ KC6TGH		(310) 675-2879
MASTR LOG	NEED HELP!		

- (1) THE "SPECIAL BAND" CONTAINS ALL THE BONUS POINT OPPORTUNITIES
- (2) ADD 81 TO THE EXTENSION TO DIAL A TRW EMPLOYEE FROM THE OUTSIDE
- (3) MEMBER OF XEROX RADIO CLUB

MORE ELEVATED VERTICALS:
HIGHER IS NOT BETTER

I've written several articles about "Elevated Vertical" antennas and pointed out some potential problems concerning the radial counterpoise system. There is another consideration I must point out for those of you who may be considering using one of these fine antennas, including either of the excellent Cushcraft R5 or R7 designs, if you mount them too high up the low angle radiation is suppressed. The accompanying plots show the performance of a 40 meter vertical for various heights above real ground. For heights up to 3/8 wavelength the low angle performance is excellent as expected. At one half wave up the high angle lobe becomes dominant and the low angle lobe is down a few dB or so. As far as low angle performance is concerned things only get worse as you get higher up.

Now for a 40 meter antenna that's higher than most of us can imagine putting up a vertical but let's consider the higher frequency bands. A half wave on 10 meters is only 17.5 feet, so this is the maximum height for good DX performance of an elevated vertical. Now the Cushcraft R-series antennas are half wave designs which have their maximum current point at the center and are around 22 feet long. For equal performance the center of the half wave vertical must be at the same point as the base of a quarter wave vertical (this is not exactly true but is close enough for our purpose). This means that the base of the R# vertical must be less than 6.5 feet off the ground for good 10 meter performance.

On 15 meters the base of a quarter wave vertical needs to be less than 23 feet and correspondingly the R# base must be less than 12 feet off the ground. The numbers for 20 meters are 35 and 24 feet respectively. I used a R5 for several years and was disappointed with its performance on 10 and 15 meters, it was up 20 feet at the base and I didn't know any better (this was before I had MININEC). I also put the R5 on top of my tower at 48 feet and it was always worse than my dipole. If you can get your vertical up many wavelengths, say several hundred feet on 20 meters, it will again be a top performer since the influence of ground reflections on the antenna pattern will be diminished and it will behave like a vertical dipole in free space.

I personally would not recommend mounting a multiband elevated vertical any higher than 10 feet off the ground if high band DXing is your interest. If you are a casual rag-chewer and don't consider yourself a DXer then almost any height will do.

Some new insight into HF Vertical performance and design appears in the ARRL Antenna Compendium, Volume 3. L.A. Moxon, G6XN wrote an excellent article, "Ground Planes, Radial Systems, and Asymmetric Dipoles", which I highly recommend to anyone considering putting up a non-ground mounted vertical.

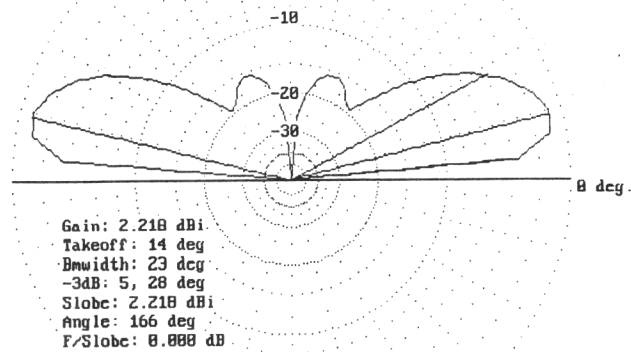
See you on the bands, de KJ6GR.

40 M Elevated Vert. 2 Radials

0 dB

W7EL
ELNEC 2.21
(c) 1991

04-16-1993 15:01:31
Freq = 7 MHz



Outer Ring = 3.000 dBi
Max. Gain = 2.218 dBi

Elevation Plot
Azimuth Angle = 0.0 Deg.

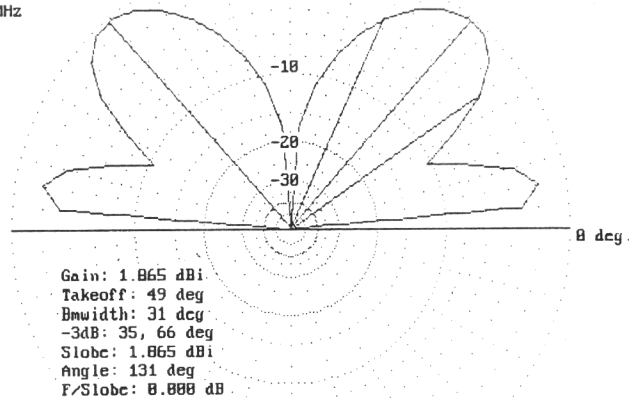
Up 33'
 $\frac{\lambda}{4}$

40 M Elevated Vert. 2 Radials

0 dB

W7EL
ELNEC 2.21
(c) 1991

04-16-1993 15:07:01
Freq = 7 MHz



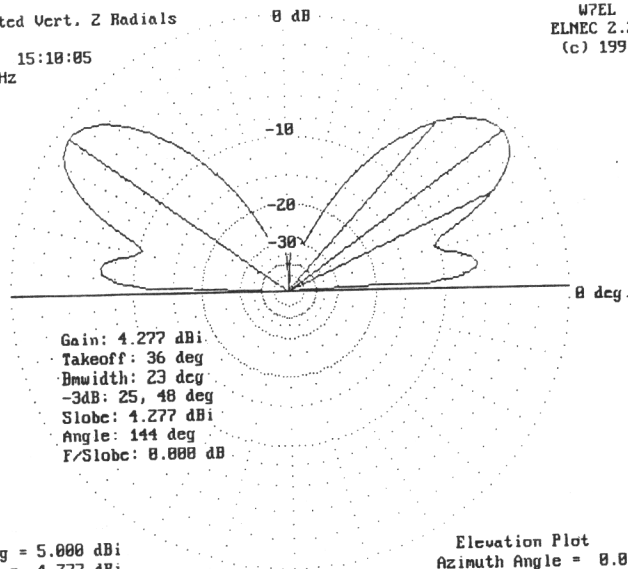
Outer Ring = 2.000 dBi
Max. Gain = 1.865 dBi

Elevation Plot
Azimuth Angle = 0.0 Deg.

Up 66'
 $\frac{\lambda}{2}$

48 M Elevated Vert. Z Radials
 04-16-1993 15:10:05
 Freq = 7 MHz

W7EL
 ELNEC 2.21
 (c) 1991

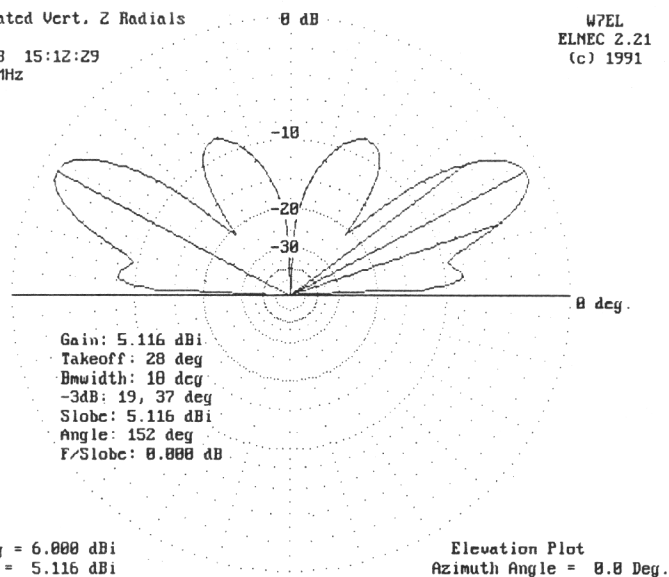


Up 99'

$$\frac{3\lambda}{4}$$

48 M Elevated Vert. Z Radials
 04-16-1993 15:12:29
 Freq = 7 MHz

W7EL
 ELNEC 2.21
 (c) 1991



Up 130'

$$\lambda$$

TRW/ARC Ancient History Department - Chapter 3

Doug Heydon, WB6WDS became club president in January of 1968 and the club moved forward with a lot of activities. The club started the "Bulletin" (later re-named "Cross-Talk") on a monthly basis to keep all our members in touch.

Major efforts were exerted during 1968 to put together a club station in the recently acquired space in Building 65.

The club did not own any ham gear and the treasury could not support any major purchases. Our balance on January 31, - \$115.20- wasn't enough to get starry-eyed over any new gear. But we were thinking big! First, we received a special allocation from the Systems Employees Association to buy a new Swan 500 SSB rig and then we approached the TRW Systems Credit Union for additional financing. President Heydon and I signed our souls away for a loan of \$ 425 to finance La Fayette two- and six-meter rigs. Since I was the club treasurer at the time, you know our monthly payments to the Credit Union were on time!

All three of our new rigs got a lot of use by the members, even with antenna limitations. By today's standards, those radios might seem strange - they used vacuum tubes! But they got us on the air and spurred us on to bigger efforts.

Carl "Rocky" Rothrock, W6MYC put in a lot of effort with several other club members to design an antenna system for the roof of Building 65. He convinced the Facilities Department that it was in the best interests of TRW to have permanent tower mounting pads and eye-bolt anchors installed on the roof. He also got the Manhattan Beach city building department to approve the plans. As you can well imagine, it was just short of a monumental task to get all this done.

Later, after quite a few Saturday Working Parties, we painted our two towers, moved them to the roof and finally, in November, erected both towers. All that remained was installation of the antennas (antennae?). That story later.

Other major activities in 1968 included our first Club Field Day. Under Doug Freeman, W6NHX, we set up operations near the FAA facility on top of the Palos Verdes Peninsula. The location was an empty field that was level enough to put up tents and masts for six operating positions. We used Bill McClellan's call - W6VB - and racked up enough contacts and points to place fourth in Class 6A.

We celebrated our success at our second annual Club Dinner at the Lobster House in King Harbor, Redondo Beach. Our speaker was John Griggs, W6KW, Director of the Southwestern Division of the ARRL. Dinner was \$ 5.50 per person!

More next time --- 73-Ed Thornley, W6RXD



HamVenture '93

September 17, 18, & 19, 1993
On the Beach at the Ventura County Fairgrounds
Ventura, California



- Manufacturer and Retail Exhibits (Saturday & Sunday)
- Technical Sessions/Workshops
- Prizes

- Wouff Hong
- Saturday Morning Swapmeet
- Shuttle Bus Between Host Hotel and Fairgrounds

Special rates at the host hotel (and other selected nearby hotels) are available by calling the Ventura Visitor's Bureau at 1-800-333-2989.

Talk-in Repeaters: 146.67(-), 224.18, 446.75 (all PL 141.3)

Make checks payable to: **Hamcon '93**. Detach and mail registration form with your check or money order to:
HamVenture '93 3463 State St. PO Box 3000-267, Santa Barbara, CA 93130
Map on Back

Name _____

Call Sign _____

Name _____

Call Sign _____

Address _____

City _____

State _____ Zip _____

Evening Phone Number

() _____

Special Needs: (Please explain particulars on the back)

- ☐ Babysitting (include number and ages of children)
- ☐ Special Handicapped Needs
- ☐ Special Dietary Requirements for Banquet

Function

Number

Cost

Total

Early Bird Registration (thru 1/31/93; includes HamVenture '93 pin) (age 15 and under free)

x \$10

Pre-Registration (2/1/93 thru 7/31/93; includes HamVenture '93 pin while supplies last*) (age 15 and under free)

x \$12

Registration (after 7/31/93) (age 15 and under free)

x \$15

All the following events are limited seating-- first come, first serve basis:

Saturday Night Banquet

x \$30

YL Luncheon

x \$15

DX Breakfast

x \$12

Friday Evening Welcome Cruise

x \$20

Saturday Santa Barbara Tour 9-4 (Historical Museum, Mission, and Waterfront, includes lunch)

x \$34

RV Parking (at Fairgrounds, no hookups)

x \$12

days

day

Make Checks Payable to: **Hamcon '93**

Total

I (We) plan to attend the following events:

☐ VE Exam

☐ T-Hunts

* Only 1500 pins available for pre-registration on first come, first serve basis. 100 will be sold at the show for \$5.00 each.